

REMARKS

The typographical errors in the abstract and in claim 4 has been corrected. The “preferred” but not mandatory guidelines for the specification are noted but it is believed the section headings already present are sufficient.

The recitation of claims 8 and 13 have been incorporated into claim 1, and those claims have been cancelled. Two new claims have been presented for consideration by the Examiner.

The claims in this application are directed to an electrically conductive paste which can be used for forming wiring conductors and which can be co-fired when firing for sintering ceramic layers in a multilayer ceramic substrate provided with the plurality of laminated ceramic layers with the wiring conductors disposed in association with the ceramic layers, and the resulting substrate. The electrically conductive paste contains a metal powder, an inorganic component which is not sintered at a sintering temperature capable of sintering the ceramic layer during firing and which is an oxide of at least one of Al, Si, Zr, Ni, Ti, Nb, Mn and Mg, a glass frit which has a softening point 150°C to 300°C lower than the sintering temperature, and an organic vehicle. The inorganic component is disposed on particle surfaces of the metal powder.

The rejection of all claims under 35 USC § 102 over Kashima is respectfully traversed. Kashima does not disclose or suggest such a paste or the substrate. The paste which it does contemplate may contain metal (Ag, Pd, Au or Pt) and an inorganic compound but that inorganic compound is a compound of W or Mo, while the inorganic component of the claims is an oxide of Al, Si, Zr, Ni, Ti, Nb, Mn and/or Mg. To the extent

that the reference refers to an oxide of any of these compounds, they are used to make the glass frit.

Moreover, the oxide in the present invention is disposed on the surfaces of the metal powder particles. Kashima does not teach or suggest anything disposed on the metal powder surfaces.

The rejection of claims 1, 2, 4-9, 15 and 18 under 35 USC § 102 over Saito is moot in view of the incorporation of the claim 8 and 13 metal oxides into all claims.

Claims 1, 2, 5-10, 15 and 16 were rejected under 35 USC § 103 over Ogawa in view of Hayama. This rejection is respectfully traversed.

Ogawa relates to a conductive paste in which the essential component is an alloy of copper, aluminum and at least one of zinc and silver (column 2, lines 36-38) and may have an outer layer of silver (column 2, lines 5-6). A separate silver powder may be present (column 4, lines 6-8). However, no paste containing metal and an oxide of Al, Si, Zr, Ni, Ti, Nb, Mn and/or Mg with the glass as specified in the rejected claims is disclosed in this patent. In fact, Ogawa teaches away from the invention in that it tells the skilled person that the formation of Al_2O_3 on the surface of the alloy degrades the conductivity of the alloy while incorporation of Zn in the alloy prevents such a layer from growing and of silver forms an inert surface (column 2, line 53 to column 3, line 10). To the extent that both the silver and alloy are used, they are simply mixed and one is not disposed on the surface of the other.

The Examiner has acknowledged that Ogawa does not disclose a glass frit having the softening point specified in the rejected claims and has therefore cited Hayama. Assuming, *arguendo*, that Hayama discloses an appropriate frit, the combination with Ogawa would not result in the claimed invention. There would be no metal with oxide disposed on its surface since Ogawa's alloy is specifically designed to avoid the presence of any oxide on a particle surface so that the particles remain conductive as is desired.

The rejection of claims 3, 10-14 and 17-20 and 16 under 35 USC § 103 over Saito or Ogawa in view of Hayama is respectfully traversed.

The combination of Ogawa and Hayama has been discussed above and is not sufficient here for the same reasons. Saito has the same deficiencies as Kashima. No oxide of Al, Si, Zr, Ni, Ti, Nb, Mn and/or Mg, nor oxide of any metal disposed on the surfaces of the metal powder particles is disclosed. In this combination also, assuming, *arguendo*, that Hayama discloses an appropriate frit, the combination with Saito would not result in the claimed invention as there would be no metal with oxide disposed on its surface.

Withdrawal of all rejections and allowance of this case is respectfully requested.

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